



002010-854.ST25

SEQUENCE LISTING

<110> Karlik, Stephen J.
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Freedman, Stephen
Yednock, Ted

<120> Composition for and Treatment of Demyelinating Diseases
and Paralysis By Administration of Remyelinating Agents

<130> 002010-854

<140> US 10/763,539
<141> 2004-01-26

<160> 71

<170> FastSEQ for Windows Version 4.0

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gtc aag ttg ttc tgc aca gct tct ggc ttc aac att aaa gac acc tat 96
Val Lys Leu Phe Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Thr Tyr
20 25 30

atg cac tgg gtg aag cag agg cct caa cag ggc ctg gag tgg att gga 144
Met His Trp Val Lys Gln Arg Pro Gln Gln Gly Leu Glu Trp Ile Gly
35 40 45

agg att gat cct gcg agt ggc gat act aaa tat gac ccg aag ttc cag 192
Arg Ile Asp Pro Ala Ser Gly Asp Thr Lys Tyr Asp Pro Lys Phe Gln
50 55 60

gtc aag gcc act att aca gcg gac acg tcc tcc aac aca gcc tgg ctg 240
Val Lys Ala Thr Ile Thr Ala Asp Thr Ser Ser Asn Thr Ala Trp Leu
65 70 75 80

cag ctc agc agc ctg aca tct gag gac act gcc gtc tac tac tgt gca 288
Gln Leu Ser Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr Cys Ala
85 90 95

gac gga atg tgg gta tca acg gga tat gct ctg gac ttc tgg ggc caa 336
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 35 40 45
 Arg Ile Asp Pro Ala Ser Gly Asp Thr Lys Tyr Asp Pro Lys Phe Gln 60
 50 55 60
 Val Lys Ala Thr Ile Thr Ala Asp Thr Ser Ser Asn Thr Ala Trp Leu 80
 65 70 75 80
 Gln Leu Ser Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr Cys Ala 95
 85 90 95
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 Gly Thr Thr Val Thr Val Ser Ser
 115 120

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 gac agg gtt acc ata acc tgc aag gcc agt cag agt gtg act aat gat 96
 Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln Ser Val Thr Asn Asp
 20 25 30
 gta gct tgg tac caa cag aag cca ggg cag tct cct aaa ctg ctg ata 144
 Val Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Lys Leu Leu Ile
 35 40 45
 tat tat gca tcc aat cgc tac act gga gtc cct gat cgc ttc act ggc 192
 Tyr Tyr Ala Ser Asn Arg Tyr Thr Gly Val Pro Asp Arg Phe Thr Gly
 50 55 60

agt gga tat ggg acg gat ttc act ttc acc atc agc act gtg cag gct	240
Ser Gly Tyr Gly Thr Asp Phe Thr Phe Thr Ile Ser Thr Val Gln Ala	
65 70 75 80	

gaa gac ctg gca gtt tat ttc tgt cag cag gat tat agc tct ccg tac	288
Glu Asp Leu Ala Val Tyr Phe Cys Gln Gln Asp Tyr Ser Ser Pro Tyr	
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Val Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Lys Leu Leu Ile	
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Tyr Tyr Ala Ser Asn Arg Tyr Thr Gly Val Pro Asp Arg Phe Thr Gly	
50 55 60	
Ser Gly Tyr Gly Thr Asp Phe Thr Phe Thr Ile Ser Thr Val Gln Ala	
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Ala His Ser Gln Val Gln Leu Gln Glu Ser Gly Ala Glu Val Val Lys	
20 25 30	

ccg ggt tcc tcc gtt aaa ctg tcc tgc aaa gct tcc ggt ttc aac atc	144
Pro Gly Ser Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Phe Asn Ile	
35 40 45	

aaa gac acc tac atg cac tgg gtt aaa cag cgt ccg ggt cag ggt ctg	192
Lys Asp Thr Tyr Met His Trp Val Lys Gln Arg Pro Gly Gln Gly Leu	

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55

60

gaa tgg atc ggt cgt atc gac ccg gct tcc ggt gac acc aaa tac gac			240
Glu Trp Ile Gly Arg Ile Asp Pro Ala Ser Gly Asp Thr Lys Tyr Asp			
65	70	75	80
ccg aaa ttc cag gtt aaa gct acc atc acc gct gac gaa tcc acc tcc			288
Pro Lys Phe Gln Val Lys Ala Thr Ile Thr Ala Asp Glu Ser Thr Ser			
85	90	95	
acc gct tac ctg gaa ctg tcc tcc ctg cgt tcc gaa gac acc gct gtt			336
Thr Ala Tyr Leu Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val			
100	105	110	
tac tac tgc gct gac ggt atg tgg gtt tcc acc ggt tac gct ctg gac			384
Tyr Tyr Cys Ala Asp Gly Met Trp Val Ser Thr Gly Tyr Ala Leu Asp			
115	120	125	
ttc tgg ggt cag ggt acc acg gtc acc gtc tcc tca ggt gag tcc			429
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<212> PRT

<213> Homo sapiens

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Pro Gly Ser Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Phe Asn Ile			
35	40	45	
Lys Asp Thr Tyr Met His Trp Val Lys Gln Arg Pro Gly Gln Gly Leu			
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Glu Trp Ile Gly Arg Ile Asp Pro Ala Ser Gly Asp Thr Lys Tyr Asp			
65	70	75	80
Pro Lys Phe Gln Val Lys Ala Thr Ile Thr Ala Asp Glu Ser Thr Ser			
85	90	95	
Thr Ala Tyr Leu Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val			
100	105	110	
Tyr Tyr Cys Ala Asp Gly Met Trp Val Ser Thr Gly Tyr Ala Leu Asp			
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gtt cac tcc atc gtt atg acc cag tcc ccg gac tcc ctg gct gtt tcc 96
Val His Ser Ile Val Met Thr Gln Ser Pro Asp Ser Leu Ala Val Ser
20 25 30

ctg ggt gaa cgt gtt acc atc aac tgc aaa gct tcc cag tcc gtt acc 144
Leu Gly Glu Arg Val Thr Ile Asn Cys Lys Ala Ser Gln Ser Val Thr
35 40 45

aac gac gtt gct tgg tac cag cag aaa ccg ggt cag tcc ccg aaa ctg 192
Asn Asp Val Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Lys Leu
50 55 60

ctg atc tac tac gct tcc aac cgt tac acc ggt gtt ccg gac cgt ttc 240
Leu Ile Tyr Tyr Ala Ser Asn Arg Tyr Thr Gly Val Pro Asp Arg Phe
65 70 75 80

tcc ggt tcc ggt tac ggt acc gac ttc acc ttc acc atc tcc tcc gtt 288
Ser Gly Ser Gly Tyr Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Val
85 90 95

cag gct gaa gac gtt gct gtt tac tac tgc cag cag gac tac tcc tcc 336
Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys Gln Gln Asp Tyr Ser Ser
100 105 110

ccg tac acc ttc ggt ggt acc aaa ctg gag atc taa ggatcctc 383
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<210> 8
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<213> Homo sapiens

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35 40 45
Asn Asp Val Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Lys Leu
50 55 60
Leu Ile Tyr Tyr Ala Ser Asn Arg Tyr Thr Gly Val Pro Asp Arg Phe
65 70 75 80
Ser Gly Ser Gly Tyr Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Val
85 90 95
Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys Gln Gln Asp Tyr Ser Ser
100 105 110
Pro Tyr Thr Phe Gly Gly Thr Lys Leu Glu Ile
115 120

<210> 9

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<213> *Homo sapiens*

<220>
<221> CDS
<222> (1) . . . (429)

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 gcc cac tcc cag gtc caa ctg cag gag agc ggt cca ggt ctt gtg aga 96
 Ala His Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Arg
 20 25 30

 cct agc cag acc ctg agc ctg acc tgc acc gtg tct ggc ttc aac att 14
 Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Phe Asn Ile
 35 40 45

 aaa gac acc tat atg cac tgg gtg aga cag cca cct gga cga ggt ctt 19
 Lys Asp Thr Tyr Met His Trp Val Arg Gln Pro Pro Gly Arg Gly Leu
 50 55 60

 gag tgg att gga agg att gat cct gcg agt ggc gat act aaa tat gac 24
 Glu Trp Ile Gly Arg Ile Asp Pro Ala Ser Gly Asp Thr Lys Tyr Asp
 65 70 75 80

 ccg aag ttc cag gtc aga gtg aca atg ctg gta gac acc agc aac 28
 Pro Lys Phe Gln Val Arg Val Thr Met Leu Val Asp Thr Ser Ser Asn
 85 90 95

 aca gcc tgg ctg aga ctc agc agc gtg aca gcc gcc gac acc gcg gtc 33
 Thr Ala Trp Leu Arg Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val
 100 105 110

 tat tat tgt gca gac gga atg tgg gta tca acg gga tat gct ctg gac 38
 Tyr Tyr Cys Ala Asp Gly Met Trp Val Ser Thr Gly Tyr Ala Leu Asp
 115 120 125

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<212> PRT
<213> *Homo sapiens*

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      20          25          30
Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Phe Asn Ile
      35          40          45

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Lys	Asp	Thr	Tyr	Met	His	Trp	Val	Arg	Gln	Pro	Pro	Gly	Arg	Gly	Leu
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65						70				75					80
Pro	Lys	Phe	Gln	Val	Arg	Val	Thr	Met	Leu	Val	Asp	Thr	Ser	Ser	Asn
						85			90						95
Thr	Ala	Trp	Leu	Arg	Leu	Ser	Ser	Val	Thr	Ala	Ala	Asp	Thr	Ala	Val
						100			105						110
Tyr	Tyr	Cys	Ala	Asp	Gly	Met	Trp	Val	Ser	Thr	Gly	Tyr	Ala	Leu	Asp
						115			120						125
Phe	Trp	Gly	Gln	Gly	Thr	Thr	Val	Thr	Val	Ser	Ser	Gly	Glu	Ser	
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<213> *Homo sapiens*

<220>
<221> CDS
<222> (1)...(429)

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gcc cac tcc cag gtc caa ctg cag gag agc ggt cca ggt ctt gtg aga      96
Ala His Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Arg
          20           25           30

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cct agc cag acc ctg agc ctg acc tgc acc gtg tct ggc ttc aac att 144
Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Phe Asn Ile
          35           40           45

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aaa gac acc tat atg cac tgg gtg aga cag cca cct gga cga ggt ctt 192
Lys Asp Thr Tyr Met His Trp Val Arg Gln Pro Pro Gly Arg Gly Leu
50 55 60

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gag tgg att gga agg att gat cct gcg agt ggc gat act aaa tat gac 240
Glu Trp Ile Gly Arg Ile Asp Pro Ala Ser Gly Asp Thr Lys Tyr Asp
   65          70           75           80

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ccg aag ttc cag gtc aaa gcg aca att acg gca gac acc agc agc aac 288
 Pro Lys Phe Gln Val Lys Ala Thr Ile Thr Ala Asp Thr Ser Ser Asn
 85 90 95

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cag ttc agc ctg aga ctc agc agc gtg aca gcc gcc gac acc gcg gtc 336
Gln Phe Ser Leu Arg Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val
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tat tat tgt gca gac gga atg tgg gta tca acg gga tat gct ctg gac 384
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<212> PRT
<213> Homo sapiens

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35 40 45
Lys Asp Thr Tyr Met His Trp Val Arg Gln Pro Pro Gly Arg Gly Leu
50 55 60
Glu Trp Ile Gly Arg Ile Asp Pro Ala Ser Gly Asp Thr Lys Tyr Asp
65 70 75 80
Pro Lys Phe Gln Val Lys Ala Thr Ile Thr Ala Asp Thr Ser Ser Asn
85 90 95
Gln Phe Ser Leu Arg Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val
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115 120 125
Phe Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Glu Ser
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acc ctg agc ctg acc tgc acc gtg tct ggc ttc aac att aaa gac acc 96
Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Phe Asn Ile Lys Asp Thr
20 25 30
tat atg cac tgg gtg aga cag cca cct gga cga ggt ctt gag tgg att 144
Tyr Met His Trp Val Arg Gln Pro Pro Gly Arg Gly Leu Glu Trp Ile
35 40 45
gga agg att gat cct gcg agt ggc gat act aaa tat gac ccg aag ttc 192
Gly Arg Ile Asp Pro Ala Ser Gly Asp Thr Lys Tyr Asp Pro Lys Phe
50 55 60
cag gtc aga gtg aca atg ctg gta gac acc agc agc aac cag ttc agc 240
Gln Val Arg Val Thr Met Leu Val Asp Thr Ser Ser Asn Gln Phe Ser
65 70 75 80

ctg aga ctc agc agc gtg aca tct gag gac acc gcg gtc tat tat tgt 288
 Leu Arg Leu Ser Ser Val Thr Ser Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95

gca gac gga atg tgg gta tca acg gga tat gct ctg gac ttc tgg ggc 336
 Ala Asp Gly Met Trp Val Ser Thr Gly Tyr Ala Leu Asp Phe Trp Gly
 100 105 110

caa ggg acc acg gtc acc gtc tcc tca ggt gag tcc 372
 Gln Gly Thr Thr Val Thr Val Ser Ser Gly Glu Ser
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<213> Homo sapiens

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 35 40 45
 Gly Arg Ile Asp Pro Ala Ser Gly Asp Thr Lys Tyr Asp Pro Lys Phe
 50 55 60
 Gln Val Arg Val Thr Met Leu Val Asp Thr Ser Ser Asn Gln Phe Ser
 65 70 75 80
 Leu Arg Leu Ser Ser Val Thr Ser Glu Asp Thr Ala Val Tyr Tyr Cys
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 100 105 110
 Gln Gly Thr Thr Val Thr Val Ser Ser Gly Glu Ser
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 gcc cac tcc cag gtc caa ctg cag gag agc ggt cca ggt ctt gtg aga 96
 Ala His Ser Gln Val Gln Leu Glu Ser Gly Pro Gly Leu Val Arg
 20 25 30
 cct agc cag acc ctg agc ctg acc tgc acc gtg tct ggc ttc aac att 144
 Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Phe Asn Ile
 35 40 45

aaa gac acc tat atg cac tgg gtg aaa cag cga cct gga cga ggt ctt	192
Lys Asp Thr Tyr Met His Trp Val Lys Gln Arg Pro Gly Arg Gly Leu	
50 55 60	
gag tgg att gga agg att gat cct gcg agt ggc gat act aaa tat gac	240
Glu Trp Ile Gly Arg Ile Asp Pro Ala Ser Gly Asp Thr Lys Tyr Asp	
65 70 75 80	
ccg aag ttc cag gtc aga gtg aca atg ctg gta gac acc agc agc aac	288
Pro Lys Phe Gln Val Arg Val Thr Met Leu Val Asp Thr Ser Ser Asn	
85 90 95	
cag ttc agc ctc aga ctc agc gtg aca gcc gcc gac acc gac gtc	336
Gln Phe Ser Leu Arg Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val	
100 105 110	
tat tat tgt gca gac gga atg tgg gta tca acg gga tat gct ctg gac	384
Tyr Tyr Cys Ala Asp Gly Met Trp Val Ser Thr Gly Tyr Ala Leu Asp	
115 120 125	
ttc tgg ggc caa ggg acc acg gtc acc gtc tcc tca ggt gag tcc	429
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<210> 16

<211> 143

<212> PRT

<213> Homo sapiens

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Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Phe Asn Ile	
35 40 45	
Lys Asp Thr Tyr Met His Trp Val Lys Gln Arg Pro Gly Arg Gly Leu	
50 55 60	
Glu Trp Ile Gly Arg Ile Asp Pro Ala Ser Gly Asp Thr Lys Tyr Asp	
65 70 75 80	
Pro Lys Phe Gln Val Arg Val Thr Met Leu Val Asp Thr Ser Ser Asn	
85 90 95	
Gln Phe Ser Leu Arg Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val	
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Ala His Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Arg
20 25 30

cct agc cag acc ctg agc ctg acc tgc acc gcg tct ggc ttc aac att 144
Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Ala Ser Gly Phe Asn Ile
35 40 45

aaa gac acc tat atg cac tgg gtg aga cag cca cct gga cga ggt ctt 192
Lys Asp Thr Tyr Met His Trp Val Arg Gln Pro Pro Gly Arg Gly Leu
50 55 60

gag tgg att gga agg att gat cct gcg agt ggc gat act aaa tat gac 240
Glu Trp Ile Gly Arg Ile Asp Pro Ala Ser Gly Asp Thr Lys Tyr Asp
65 70 75 80

ccg aag ttc cag gtc aga gtg aca atg ctg gta gac acc agc agc aac 288
Pro Lys Phe Gln Val Arg Val Thr Met Leu Val Asp Thr Ser Ser Asn
85 90 95

cag ttc agc ctg aga ctc agc agc gtg aca gcc gcc gac acc gcg gtc 336
Gln Phe Ser Leu Arg Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val
100 105 110

tat tat tgt gca gac gga atg tgg gta tca acg gga tat gct ctg gac 384
Tyr Tyr Cys Ala Asp Gly Met Trp Val Ser Thr Gly Tyr Ala Leu Asp
115 120 125

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<213> Homo sapiens

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20 25 30
Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Ala Ser Gly Phe Asn Ile
35 40 45
Lys Asp Thr Tyr Met His Trp Val Arg Gln Pro Pro Gly Arg Gly Leu
50 55 60
Glu Trp Ile Gly Arg Ile Asp Pro Ala Ser Gly Asp Thr Lys Tyr Asp
65 70 75 80
Pro Lys Phe Gln Val Arg Val Thr Met Leu Val Asp Thr Ser Ser Asn
85 90 95

Gln	Phe	Ser	Leu	Arg	Leu	Ser	Ser	Val	Thr	Ala	Ala	Asp	Thr	Ala	Val
			100					105				110			
Tyr	Tyr	Cys	Ala	Asp	Gly	Met	Trp	Val	Ser	Thr	Gly	Tyr	Ala	Leu	Asp
			115				120				125				
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gtt cac tcc gac atc cag ctg acc cag agc cca agc agc ctg agc gcc	96
Val His Ser Asp Ile Gln Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala	
20 25 30	
agc gtg ggt gac aga gtg acc atc acc tgt aag gcc agt cag agt gtg	144
Ser Val Gly Asp Arg Val Thr Ile Thr Cys Lys Ala Ser .Gln Ser Val	
35 40 45	
act aat gat gta gct tgg tac cag cag aag cca ggt aag gct cca aag	192
Thr Asn Asp Val Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys	
50 55 60	
ctg ctg atc tac tat gca tcc aat cgc tac act ggt gtg cca agc aga	240
Leu Leu Ile Tyr Tyr Ala Ser Asn Arg Tyr Thr Gly Val Pro Ser Arg	
65 70 75 80	
ttc agc ggt agc ggt acc gac ttc acc ttc acc atc agc agc	288
Phe Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser	
85 90 95	
ctc cag cca gag gac atc gcc acc tac tac tgc cag cag gat tat agc	336
Leu Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Asp Tyr Ser	
100 105 110	
tct ccg tac acg ttc ggc caa ggg acc aag gtg gaa atc aaa cgt aag	384
Ser Pro Tyr Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Lys	
115 120 125	
tg	386
<210> 20	
<211> 128	
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<400> 20	
Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly	

1	5	10	15
Val His Ser Asp Ile Gln Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala			
20	25	30	
Ser Val Gly Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln Ser Val			
35	40	45	
Thr Asn Asp Val Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys			
50	55	60	
Leu Leu Ile Tyr Tyr Ala Ser Asn Arg Tyr Thr Gly Val Pro Ser Arg			
65	70	75	80
Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser			
85	90	95	
Leu Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Asp Tyr Ser			
100	105	110	
Ser Pro Tyr Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Lys			
115	120	125	

<210> 21
<211> 386
<212> DNA
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<220>
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<222> (1)...(386)

<400> 21	48
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Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly	
1 5 10 15	
gtc cac tcc agc atc gtg atg acc cag agc cca agc agc ctg agc gcc	96
Val His Ser Ser Ile Val Met Thr Gln Ser Pro Ser Ser Leu Ser Ala	
20 25 30	
agc gtg ggt gac aga gtg acc atc acc tgt aag gcc agt cag agt gtg	144
Ser Val Gly Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln Ser Val	
35 40 45	
act aat gat gta gct tgg tac cag cag aag cca ggt aag gct cca aag	192
Thr Asn Asp Val Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys	
50 55 60	
ctg ctg atc tac tat gca tcc aat cgc tac act ggt gtg cca gat aga	240
Leu Leu Ile Tyr Tyr Ala Ser Asn Arg Tyr Thr Gly Val Pro Asp Arg	
65 70 75 80	
tcc agc ggt agc ggt tat ggt acc gac ttc acc ttc acc atc agc agc	288
Phe Ser Gly Ser Gly Tyr Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser	
85 90 95	
ctc cag cca gag gac atc gcc acc tac tac tgc cag cag gat tat agc	336
Leu Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Asp Tyr Ser	
100 105 110	
tct ccg tac acg ttc ggc caa ggg acc aag gtg gaa atc aaa cgt aag	384
Ser Pro Tyr Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Lys	
115 120 125	

tg

386

<210> 22
<211> 128
<212> PRT
<213> Homo sapiens

<400> 22
Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly
1 5 10 15
Val His Ser Ser Ile Val Met Thr Gln Ser Pro Ser Ser Leu Ser Ala
20 25 30
Ser Val Gly Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln Ser Val
35 40 45
Thr Asn Asp Val Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys
50 55 60
Leu Leu Ile Tyr Tyr Ala Ser Asn Arg Tyr Thr Gly Val Pro Asp Arg
65 70 75 80
Phe Ser Gly Ser Gly Tyr Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser
85 90 95
Leu Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Asp Tyr Ser
100 105 110
Ser Pro Tyr Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Lys
115 120 125

<210> 23
<211> 386
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)...(386)

<400> 23
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Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly
1 5 10 15
gtc cac tcc gac atc cag atg acc cag agc cca agc agc ctg agc gcc 96
Val His Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala
20 25 30
agc gtg ggt gac aga gtg acc atc acc tgt aag gcc agt cag agt gtg 144
Ser Val Gly Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln Ser Val
35 40 45
act aat gat gta gct tgg tac cac cag aag cca ggt aag gct cca aag 192
Thr Asn Asp Val Ala Trp Tyr His Gln Lys Pro Gly Lys Ala Pro Lys
50 55 60
ctg ctg atc tac tat gca tcc aat cgc tac act ggt gtg cca gat aga 240
Leu Leu Ile Tyr Tyr Ala Ser Asn Arg Tyr Thr Gly Val Pro Asp Arg
65 70 75 80
ttc agc ggt agc ggt tat ggt acc gac ttc acc ttc acc atc agc agc 288
Phe Ser Gly Ser Gly Tyr Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser
85 90 95

ctc cag cca gag gac atc gcc acc tac tac tgc cag cag gat tat agc Leu Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Asp Tyr Ser 100 105 110	336
tct ccg tac acg ttc ggc caa ggg acc aag gtg gaa atc aaa cgt aag Ser Pro Tyr Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Lys 115 120 125	384
 tg	
<210> 24 <211> 128 <212> PRT <213> Homo sapiens	386
<400> 24 Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly 1 5 10 15 Val His Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala 20 25 30 Ser Val Gly Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln Ser Val 35 40 45 Thr Asn Asp Val Ala Trp Tyr His Gln Lys Pro Gly Lys Ala Pro Lys 50 55 60 Leu Leu Ile Tyr Tyr Ala Ser Asn Arg Tyr Thr Gly Val Pro Asp Arg 65 70 75 80 Phe Ser Gly Ser Gly Tyr Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser 85 90 95 Leu Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Asp Tyr Ser 100 105 110 Ser Pro Tyr Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Lys 115 120 125	
<210> 25 <211> 37 <212> DNA <213> Homo sapiens	
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<400> 25 cagaaaggctt gccgccacc atg aga ccg tct att cag Met Arg Pro Ser Ile Gln 1 5	37
<210> 26 <211> 6 <212> PRT <213> Homo sapiens	
<400> 26 Met Arg Pro Ser Ile Gln 1 5	

<210> 27
 <211> 35
 <212> DNA
 <213> Homo sapiens

<400> 27
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<210> 28
 <211> 37
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (20) ... (37)

<400> 28
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 Met Lys Cys Ser Trp Val
 1 5

<210> 29
 <211> 6
 <212> PRT
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<400> 29
 Met Lys Cys Ser Trp Val
 1 5

<210> 30
 <211> 33
 <212> DNA
 <213> Homo sapiens

<400> 30
 ccgaggatcc actcacctga ggagacggtg act 33

<210> 31
 <211> 39
 <212> DNA
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<400> 31
 gatggtgact ctatcccta cagatgcaga cagtggaga 39

<210> 32
 <211> 32
 <212> DNA
 <213> Homo sapiens

<400> 32
 ctgttaggaga tagagtcacc atcacttgca ag 32

<210> 33
 <211> 39

<212> DNA		
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aggagctttt ccaggtgtct gttggtagcca agccatata	39	
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<211> 41		
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accaacagac acctggaaaa gtccttaggc tgctcataca t	41	
<210> 35		
<211> 40		
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<400> 35		
gcaggctgct gatggtaaaa gtataatctc tcccagaccc	40	
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<211> 42		
<212> DNA		
<213> Homo sapiens		
<400> 36		
actttcacca tcagcagcct gcagcctgaa gatattgcaa ct	42	
<210> 37		
<211> 59		
<212> DNA		
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<400> 37		
ccgaggatcc actcacgttt gatttccacc ttggtgccctt gaccgaacgt ccacagatt	59	
<210> 38		
<211> 33		
<212> DNA		
<213> Homo sapiens		
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gaaaaagctc ctaggctgct catatatattac aca	33	
<210> 39		
<211> 38		
<212> DNA		
<213> Homo sapiens		
<400> 39		
ccgaggatcc actcacgttt gatttccacc ttttgtgcc	38	
<210> 40		
<211> 51		
<212> DNA		
<213> Homo sapiens		

<400> 40 aacccagtgt atatagggtt cttaatgtt gaaaccgcta gctttacagc t	51
<210> 41 <211> 67 <212> DNA <213> Homo sapiens	
<400> 41 aaagacacct atatacactg gtttagacag gcccctggcc aaaggctgga gtggatggga 60 aggattg	67
<210> 42 <211> 26 <212> DNA <213> Homo sapiens	
<400> 42 gaccggcccc tggaacttcg ggtcat	26
<210> 43 <211> 66 <212> DNA <213> Homo sapiens	
<400> 43 gaccgcagaat tccagggccg ggtcaccatc accgcagaca cctctgccag caccgcctac 60 atggaa	66
<210> 44 <211> 64 <212> DNA <213> Homo sapiens	
<400> 44 ccatagcata gaccccgtag ttaccataat atccctctct ggccgcgtatc tagactgcag 60 tgtc	64
<210> 45 <211> 63 <212> DNA <213> Homo sapiens	
<400> 45 ggtaactacg gggcttatgc tatggactac tgggtcaag gaacccttgtt caccgtctcc 60 tca	63
<210> 46 <211> 37 <212> DNA <213> Homo sapiens	
<400> 46 ccagggccgg gtcaccatca ccagagacac ctctgcc	37
<210> 47 <211> 27 <212> DNA <213> Homo sapiens	

<400> 47		
caggccccctg gccaaaggct ggagtgg		27
<210> 48		
<211> 17		
<212> DNA		
<213> Homo sapiens		
<400> 48		
tacgcaaacc gcctctc		17
<210> 49		
<211> 18		
<212> DNA		
<213> Homo sapiens		
<400> 49		
gagtgcacca tatgcgtt		18
<210> 50		
<211> 116		
<212> PRT		
<213> Homo sapiens		
<400> 50		
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala		
1 5 10 15		
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Ser Phe Thr Ser Tyr		
20 25 30		
Tyr Ile His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Val		
35 40 45		
Gly Tyr Ile Asp Pro Phe Asn Gly Gly Thr Ser Tyr Asn Gln Lys Phe		
50 55 60		
Lys Gly Lys Val Thr Met Thr Val Asp Thr Ser Thr Asn Thr Ala Tyr		
65 70 75 80		
Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys		
85 90 95		
Ala Arg Gly Gly Asn Arg Phe Ala Tyr Trp Gly Gln Gly Thr Leu Val		
100 105 110		
Thr Val Ser Ser		
115		
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<212> DNA		
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<222> (53)...(432)		
<400> 51		
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Met Arg		
1		
ccg tct att cag ttc ctg ggg ctc ttg ttc tgg ctt cat ggt gct 106		
Pro Ser Ile Gln Phe Leu Gly Leu Leu Phe Trp Leu His Gly Ala		

5

10

15

cag tgt gac atc cag atg aca cag tct cca tcc tca ctg tct gca tct 154
 Gln Cys Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser
 20 25 30

ctg gga ggc aaa gtc acc atc act tgc aag aca agc caa gac att aac 202
 Leu Gly Gly Lys Val Thr Ile Thr Cys Lys Thr Ser Gln Asp Ile Asn
 35 40 45 50

aag tat atg gct tgg tac caa cac aag cct gga aaa cgt cct agg ctg 250
 Lys Tyr Met Ala Trp Tyr Gln His Lys Pro Gly Lys Arg Pro Arg Leu
 55 60 65

ctc ata cat tac aca tct gca tta cag cca ggc atc cca tca agg ttc 298
 Leu Ile His Tyr Thr Ser Ala Leu Gln Pro Gly Ile Pro Ser Arg Phe
 70 75 80

agt gga agt ggg tct ggg aga gat tat tcc ttc aac atc agc aac ctg 346
 Ser Gly Ser Gly Ser Gly Arg Asp Tyr Ser Phe Asn Ile Ser Asn Leu
 85 90 95

gag cct gaa gat att gca act tat tat tgt cta cag tat gat aat ctg 394
 Glu Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Leu Gln Tyr Asp Asn Leu
 100 105 110

tgg acg ttc ggt gga ggc acc aag ctg gaa atc aaa cg ggctgatgct 442
 Trp Thr Phe Gly Gly Thr Lys Leu Glu Ile Lys
 115 120 125

gcacccaactg tatccatctt cccaccatcc acccggtatc c 483

<210> 52
<211> 126
<212> PRT
<213> Mouse

<400> 52
Met Arg Pro Ser Ile Gln Phe Leu Gly Leu Leu Phe Trp Leu His
 1 5 10 15
 Gly Ala Gln Cys Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser
 20 25 30
 Ala Ser Leu Gly Gly Lys Val Thr Ile Thr Cys Lys Thr Ser Gln Asp
 35 40 45
 Ile Asn Lys Tyr Met Ala Trp Tyr Gln His Lys Pro Gly Lys Arg Pro
 50 55 60
 Arg Leu Leu Ile His Tyr Thr Ser Ala Leu Gln Pro Gly Ile Pro Ser
 65 70 75 80
 Arg Phe Ser Gly Ser Gly Ser Gly Arg Asp Tyr Ser Phe Asn Ile Ser
 85 90 95
 Asn Leu Glu Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Leu Gln Tyr Asp
 100 105 110
 Asn Leu Trp Thr Phe Gly Gly Thr Lys Leu Glu Ile Lys
 115 120 125

<210> 53
<211> 470
<212> DNA

<213> Mouse

<220>

<221> CDS

<222> (1)...(432)

<400> 53

atg aaa tgc agc tgg gtc atg ttc ctg atg gca gtg gtt aca ggg	48
Met Lys Cys Ser Trp Val Met Phe Phe Leu Met Ala Val Val Thr Gly	
1 5 10 15	

gtc aat tca gag gtt cag ctg cag cag tct ggg gca gag ctt gtg aag	96
Val Asn Ser Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Lys	
20 25 30	

cca ggg gcc tca gtc aag ttg tcc tgc aca gct tct ggc ttc aac att	144
Pro Gly Ala Ser Val Lys Leu Ser Cys Thr Ala Ser Gly Phe Asn Ile	
35 40 45	

aaa gac acc tat ata cac tgt gtg aag cag agg cct gaa cag ggc ctg	192
Lys Asp Thr Tyr Ile His Cys Val Lys Gln Arg Pro Glu Gln Gly Leu	
50 55 60	

gag tgg att gga agg att gat cct gcg aat ggt tat act aaa tat gac	240
Glu Trp Ile Gly Arg Ile Asp Pro Ala Asn Gly Tyr Thr Lys Tyr Asp	
65 70 75 80	

ccg aag ttc cag ggc aag gcc act ata aca gct gac aca tcc tcc aac	288
Pro Lys Phe Gln Gly Lys Ala Thr Ile Ala Asp Thr Ser Ser Asn	
85 90 95	

aca gcc tac ctg cag ctc agc agc ctg aca tct gag gac act gcc gtc	336
Thr Ala Tyr Leu Gln Leu Ser Ser Leu Thr Ser Glu Asp Thr Ala Val	
100 105 110	

tat ttc tgt gct aga gag gga tat tat ggt aac tac ggg gtc tat gct	384
Tyr Phe Cys Ala Arg Glu Gly Tyr Tyr Gly Asn Tyr Gly Val Tyr Ala	
115 120 125	

atg gac tac tgg ggt caa gga acc tca gtc acc gtc tcc tca gcc aaa	432
Met Asp Tyr Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser Ala Lys	
130 135 140	

acgacacccc catctgtcta tccactggcc cgggatcc 470

<210> 54

<211> 144

<212> PRT

<213> Mouse

<400> 54

Met Lys Cys Ser Trp Val Met Phe Phe Leu Met Ala Val Val Thr Gly	
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Val Asn Ser Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Lys	
20 25 30	
Pro Gly Ala Ser Val Lys Leu Ser Cys Thr Ala Ser Gly Phe Asn Ile	
35 40 45	
Lys Asp Thr Tyr Ile His Cys Val Lys Gln Arg Pro Glu Gln Gly Leu	
50 55 60	

Glu Trp Ile Gly Arg Ile Asp Pro Ala Asn Gly Tyr Thr Lys Tyr Asp
 65 70 75 80
 Pro Lys Phe Gln Gly Lys Ala Thr Ile Thr Ala Asp Thr Ser Ser Asn
 85 90 95
 Thr Ala Tyr Leu Gln Leu Ser Ser Leu Thr Ser Glu Asp Thr Ala Val
 100 105 110
 Tyr Phe Cys Ala Arg Glu Gly Tyr Tyr Gly Asn Tyr Gly Val Tyr Ala
 115 120 125
 Met Asp Tyr Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser Ala Lys
 130 135 140

<210> 55
 <211> 106
 <212> PRT
 <213> Homo sapiens

<400> 55
 Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Leu Gly
 1 5 10 15
 Gly Lys Val Thr Ile Thr Cys Lys Thr Ser Gln Asp Ile Asn Lys Tyr
 20 25 30
 Met Ala Trp Tyr Gln His Lys Pro Gly Lys Arg Pro Arg Leu Leu Ile
 35 40 45
 His Tyr Thr Ser Ala Leu Gln Pro Gly Ile Pro Ser Arg Phe Ser Gly
 50 55 60
 Ser Gly Ser Gly Arg Asp Tyr Ser Phe Asn Ile Ser Asn Leu Glu Pro
 65 70 75 80
 Glu Asp Ile Ala Thr Tyr Tyr Cys Leu Gln Tyr Asp Asn Leu Trp Thr
 85 90 95
 Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
 100 105

<210> 56
 <211> 107
 <212> PRT
 <213> Homo sapiens

<400> 56
 Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1 5 10 15
 Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Gln Asp Ile Ile Lys Tyr
 20 25 30
 Leu Asn Trp Tyr Gln Gln Thr Pro Gly Lys Ala Pro Lys Leu Leu Ile
 35 40 45
 Tyr Glu Ala Ser Asn Leu Gln Ala Gly Val Pro Ser Arg Phe Ser Gly
 50 55 60
 Ser Gly Ser Gly Thr Asp Tyr Thr Phe Thr Ile Ser Ser Leu Gln Pro
 65 70 75 80
 Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Tyr Gln Ser Leu Pro Tyr
 85 90 95
 Thr Phe Gly Gln Gly Thr Lys Leu Gln Ile Thr
 100 105

<210> 57
 <211> 106
 <212> PRT

<213> Homo sapiens

<400> 57

Asp	Ile	Gln	Met	Thr	Gln	Ser	Pro	Ser	Ser	Leu	Ser	Ala	Ser	Val	Gly
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Asp	Arg	Val	Thr	Ile	Thr	Cys	Lys	Thr	Ser	Gln	Asp	Ile	Asn	Lys	Tyr
				20				25					30		
Met	Ala	Trp	Tyr	Gln	Gln	Thr	Pro	Gly	Lys	Ala	Pro	Arg	Leu	Leu	Ile
				35				40				45			
His	Tyr	Thr	Ser	Ala	Leu	Gln	Pro	Gly	Ile	Pro	Ser	Arg	Phe	Ser	Gly
				50				55			60				
Ser	Gly	Ser	Gly	Arg	Asp	Tyr	Thr	Phe	Thr	Ile	Ser	Ser	Leu	Gln	Pro
				65				70			75		80		
Glù	Asp	Ile	Ala	Thr	Tyr	Tyr	Cys	Leu	Gln	Tyr	Asp	Asn	Leu	Trp	Thr
				85				90				95			
Phe	Gly	Gln	Gly	Thr	Lys	Val	Glu	Ile	Lys						
				100				105							

<210> 58

<211> 6

<212> PRT

<213> Homo sapiens

<400> 58

Arg	Ile	Arg	Val	Glu	Lys
1				5	

<210> 59

<211> 123

<212> PRT

<213> Homo sapiens

<400> 59

Glu	Val	Gln	Leu	Gln	Gln	Ser	Gly	Ala	Glu	Leu	Val	Lys	Pro	Gly	Ala
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Ser	Val	Lys	Leu	Ser	Cys	Thr	Ala	Ser	Gly	Phe	Asn	Ile	Lys	Asp	Thr
					20			25				30			
Tyr	Ile	His	Cys	Val	Lys	Gln	Arg	Pro	Glu	Gln	Gly	Leu	Glu	Trp	Ile
				35				40			45				
Gly	Arg	Ile	Asp	Pro	Ala	Asn	Gly	Tyr	Thr	Lys	Tyr	Asp	Pro	Lys	Phe
				50				55			60				
Gln	Gly	Lys	Ala	Thr	Ile	Thr	Ala	Asp	Thr	Ser	Ser	Asn	Thr	Ala	Tyr
				65				70			75		80		
Leu	Gln	Leu	Ser	Ser	Leu	Thr	Ser	Glu	Asp	Thr	Ala	Val	Tyr	Phe	Cys
					85			90				95			
Ala	Arg	Glu	Gly	Tyr	Tyr	Gly	Asn	Tyr	Gly	Val	Tyr	Ala	Met	Asp	Tyr
				100				105				110			
Trp	Gly	Gln	Gly	Thr	Ser	Val	Thr	Val	Val	Ser	Ser				
				115				120							

<210> 60

<211> 119

<212> PRT

<213> Homo sapiens

<400> 60

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
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 Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
 20 25 30
 Ala Met His Trp Val Arg Gln Ala Pro Gly Gln Arg Leu Glu Trp Met
 35 40 45
 Gly Trp Ile Asn Ala Gly Asn Gly Asn Thr Lys Tyr Ser Gln Lys Phe
 50 55 60
 Gln Gly Arg Val Thr Ile Thr Arg Asp Thr Ser Ala Ser Thr Ala Tyr
 65 70 75 80
 Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95
 Ala Arg Gly Gly Tyr Tyr Gly Ser Gly Ser Asn Tyr Trp Gly Gln Gly
 100 105 110
 Thr Leu Val Thr Val Ser Ser
 115

<210> 61
<211> 123
<212> PRT
<213> Homo sapiens

<400> 61
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
 1 5 10 15
 Ser Val Lys Val Ser Cys Lys Ala Ser Gly Phe Asn Ile Lys Asp Thr
 20 25 30
 Tyr Ile His Trp Val Arg Gln Ala Pro Gly Gln Arg Leu Glu Trp Met
 35 40 45
 Asx Arg Ile Asp Pro Ala Asn Gly Tyr Thr Lys Tyr Asp Pro Lys Phe
 50 55 60
 Gln Gly Arg Val Thr Ile Thr Ala Asp Thr Ser Ala Ser Thr Ala Tyr
 65 70 75 80
 Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95
 Ala Arg Glu Gly Tyr Tyr Gly Asn Tyr Gly Val Tyr Ala Met Asp Tyr
 100 105 110
 Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
 115 120

<210> 62
<211> 6
<212> PRT
<213> Homo sapiens

<400> 62
Phe Asn Ile Lys Gly Ala
 1 5

<210> 63
<211> 6
<212> PRT
<213> Homo sapiens

<400> 63
Phe Asn Ile Lys Ala Phe

1

5

<210> 64
<211> 406
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (16)...(393)

<400> 64

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Met Arg Pro Ser Ile Gln Phe Leu Gly Leu Leu Leu	
1 5 10	

ttc tgg ctt cat ggt gct cag tgt gac atc cag atg aca cag tct cca	99
Phe Trp Leu His Gly Ala Gln Cys Asp Ile Gln Met Thr Gln Ser Pro	
15 20 25	

tcc tca ctg tct gca tct gta gga gat aga gtc acc atc act tgc aag	147
Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Lys	
30 35 40	

aca agc caa gac att aac aag tat atg gct tgg tac caa cag aca cct	195
Thr Ser Gln Asp Ile Asn Lys Tyr Met Ala Trp Tyr Gln Gln Thr Pro	
45 50 55 60	

gga aaa gct cct agg ctg ctc ata cat tac aca tct gca tta cag cca	243
Gly Lys Ala Pro Arg Leu Leu Ile His Tyr Thr Ser Ala Leu Gln Pro	
65 70 75	

ggc atc cca tca agg ttc agt gga agt ggg tct ggg aga gat tat act	291
Gly Ile Pro Ser Arg Phe Ser Gly Ser Gly Arg Asp Tyr Thr	
80 85 90	

ttc acc atc agc agc ctg cag cct gaa gat att gca act tat tat tgt	339
Phe Thr Ile Ser Ser Leu Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys	
95 100 105	

cta cag tat gat aat ctg tgg acg ttc ggt caa ggc acc aag gtg gaa	387
Leu Gln Tyr Asp Asn Leu Trp Thr Phe Gly Gln Gly Thr Lys Val Glu	
110 115 120	

atc aaa cgtgagtggaa tcc	406
Ile Lys	
125	

<210> 65
<211> 126
<212> PRT
<213> Homo sapiens

<400> 65

Met Arg Pro Ser Ile Gln Phe Leu Gly Leu Leu Leu Phe Trp Leu His	
1 5 10 15	
Gly Ala Gln Cys Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser	

20	25	30
Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Lys Thr Ser Gln Asp		
35	40	45
Ile Asn Lys Tyr Met Ala Trp Tyr Gln Gln Thr Pro Gly Lys Ala Pro		
50	55	60
Arg Leu Leu Ile His Tyr Thr Ser Ala Leu Gln Pro Gly Ile Pro Ser		
65	70	75
Arg Phe Ser Gly Ser Gly Arg Asp Tyr Thr Phe Thr Ile Ser		
85	90	95
Ser Leu Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Leu Gln Tyr Asp		
100	105	110
Asn Leu Trp Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys		
115	120	125

<210> 66
<211> 454
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (16)...(441)

<p><400> 66</p> <p>aagcttgcgg ccacc atg gac tgg acc tgg cgc gtg ttt tgc ctg ctc gcc Met Asp Trp Thr Trp Arg Val Phe Cys Leu Leu Ala 1 5 10</p> <p>gtg gct cct ggg gcc cac agc cag gtg caa cta gtg cag tcc ggc gcc Val Ala Pro Gly Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala 15 20 25</p> <p>gaa gtg aag aaa ccc ggt gct tcc gtg aaa gtc agc tgt aaa gct agc Glu Val Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser 30 35 40</p> <p>ggt ttc aac att aaa gac acc tat ata cac tgg gtt aga cag gcc cct Gly Phe Asn Ile Lys Asp Thr Tyr Ile His Trp Val Arg Gln Ala Pro 45 50 55 60</p> <p>ggc caa agg ctg gag tgg atg gga agg att gat cct gcg aat ggt tat Gly Gln Arg Leu Glu Trp Met Gly Arg Ile Asp Pro Ala Asn Gly Tyr 65 70 75</p> <p>act aaa tat gac ccg aag ttc cag ggc cgg gtc acc atc acc gca gac Thr Lys Tyr Asp Pro Lys Phe Gln Gly Arg Val Thr Ile Thr Ala Asp 80 85 90</p> <p>acc tct gcc agc acc gcc tac atg gaa ctg tcc agc ctg cgc tcc gag Thr Ser Ala Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu 95 100 105</p> <p>gac act gca gtc tac tac tgc gcc aga gag gga tat tat ggt aac tac Asp Thr Ala Val Tyr Tyr Cys Ala Arg Glu Gly Tyr Tyr Gly Asn Tyr 110 115 120</p> <p>ggg gtc tat gct atg gac tac tgg ggt caa gga acc ctt gtc acc gtc Gly Val Tyr Ala Met Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val</p>	<p>51</p> <p>99</p> <p>147</p> <p>195</p> <p>243</p> <p>291</p> <p>339</p> <p>387</p> <p>435</p>
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125

130

135

140

454

tcc tca ggtgagtggaa tcc
 Ser Ser

<210> 67
<211> 142
<212> PRT
<213> Homo sapiens

<400> 67
Met Asp Trp Thr Trp Arg Val Phe Cys Leu Leu Ala Val Ala Pro Gly
1 5 10 15
Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
20 25 30
Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Phe Asn Ile
35 40 45
Lys Asp Thr Tyr Ile His Trp Val Arg Gln Ala Pro Gly Gln Arg Leu
50 55 60
Glu Trp Met Gly Arg Ile Asp Pro Ala Asn Gly Tyr Thr Lys Tyr Asp
65 70 75 80
Pro Lys Phe Gln Gly Arg Val Thr Ile Thr Ala Asp Thr Ser Ala Ser
85 90 95
Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
100 105 110
Tyr Tyr Cys Ala Arg Glu Gly Tyr Tyr Gly Asn Tyr Gly Val Tyr Ala
115 120 125
Met Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
130 135 140

<210> 68
<211> 109
<212> PRT
<213> Homo sapiens

<400> 68
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Leu Gly
1 5 10 15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asp Asp Ile Ser Asn
20 25 30
Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Gly Ser Pro Lys Leu Leu
35 40 45
Ile Tyr Tyr Ala Ser Arg Leu His Ser Gly Val Pro Ser Arg Phe Ser
50 55 60
Gly Ser Gly Ser Gly Thr Asp Tyr Ser Leu Thr Ile Ser Asn Leu Glu
65 70 75 80
Gln Glu Asp Ile Ala Thr Tyr Phe Cys Gln Gln Gly Asn Thr Leu Pro
85 90 95
Pro Arg Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
100 105

<210> 69
<211> 130
<212> PRT
<213> Homo sapiens

<220>
<221> VARIANT
<222> 32, 33
<223> Xaa = Any Amino Acid

<400> 69
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asp Ser Leu Val Xaa
20 25 30
Xaa Ser Ile Ser Asn Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys
35 40 45
Ala Pro Lys Leu Leu Ile Tyr Ala Ala Ser Ser Leu Glu Ser Gly Val
50 55 60
Ala Pro Lys Leu Leu Ile Tyr Ala Ala Ser Ser Leu Glu Ser Gly Val
65 70 75 80
Pro Ser Arg Phe Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr
85 90 95
Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln
100 105 110
Tyr Asn Ser Leu Pro Glu Trp Thr Phe Gly Gln Gly Thr Lys Val Glu
115 120 125
Ile Lys
130

<210> 70
<211> 125
<212> PRT
<213> Homo sapiens

<220>
<221> VARIANT
<222> 106, 120
<223> Xaa = Any Amino Acid

<400> 70
Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Lys Pro Gly Ala
1 5 10 15
Ser Val Lys Leu Ser Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Thr
20 25 30
Tyr Met His Trp Val Lys Gln Arg Pro Glu Gln Gly Leu Glu Trp Ile
35 40 45
Gly Arg Ile Asp Pro Ala Asn Gly Asn Thr Lys Tyr Asp Pro Lys Phe
50 55 60
Gln Gly Lys Ala Thr Ile Thr Ala Asp Thr Ser Ser Asn Thr Ala Tyr
65 70 75 80
Leu Gln Leu Ser Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95
Ala Arg Gly Tyr Tyr Tyr Tyr Asp Ser Xaa Val Gly Tyr Tyr Ala Met
100 105 110
Asp Tyr Trp Gly Gln Gly Thr Xaa Val Thr Val Ser Ser
115 120 125

<210> 71
<211> 129
<212> PRT
<213> Homo sapiens

<220>
<221> VARIANT
<222> 115
<223> Xaa = Any Amino Acid

<400> 71
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
20 25 30
Ala Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45
Gly Trp Ile Asn Pro Tyr Gly Asn Gly Asp Thr Asn Tyr Ala Gln Lys
50 55 60
Phe Gln Gly Arg Val Thr Ile Thr Ala Asp Thr Ser Thr Ser Thr Ala
65 70 75 80
Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr
85 90 95
Cys Ala Arg Ala Pro Gly Tyr Gly Ser Gly Gly Gly Cys Tyr Arg Gly
100 105 110
Asp Tyr Xaa Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser
115 120 125
Ser